Reviewer's report

Title: High Carriage Rate of High-level Penicillin-Resistant Streptococcus pneumoniae in a Taiwan Kindergarten Associated with a Case of Pneumococcal Meningitis

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Reviewer: John S. Bradley

Reviewer's report:

The authors document the challenges of widespread penicillin-resistance in pneumococci carried in the nasopharynx of attendees of a kindergarten in Taiwan, following hospitalization of one of the classmates with meningitis.

The authors cultured the nasopharynx of 78 children who attended the kindergarten, detecting pneumococcus in 41%. Of concern, 44% of the isolates were the same serotype, and as assessed by PFGE most were identical to, or similar to (differing only by 4 bands) the Taiwan 19F-14 clone previously described by the authors. These isolates were all penicillin-resistant.

This manuscript is largely descriptive, demonstrating capably by molecular techniques the magnitude of the problem facing physicians who care for children. This information has important implications for treatment of invasive pneumococcal disease in countries in which conjugate pneumococcal vaccines are not yet universally accepted. It also should represent the basis for instituting both antibiotic restriction policies, as well as universal immunization programs, as noted by the authors.

The following are considered Minor Essential Revisions:

It is assumed that index case did not receive conjugate pneumococcal vaccine, nor did any of his classmates. This could be stated in the manuscript.

The authors do not mention in the Methods the number of colonies of potential pneumococci assessed on the primary agar plates, for serotyping the isolates from each child. It does not appear that children in this study were colonized by more than one serotype. The technique for obtaining the nasopharyngeal swab is somewhat different from that used in Finnish and Israeli studies, in which a thin calcium alginate swab is passed all the way to the posterior nasopharyngeal wall. The authors may miss some children with true colonization by culturing the anterior portion of the nose, and it may help in the manuscript to comment on the different techniques used to assess colonization.

The case description for the child with meningitis can be shortened, as the details are not so relevant this manuscript which focuses on epidemiology.

In the discussion, the authors could note that in countries with universal conjugate pneumococcal vaccination, meningococcus is the most common bacterial pathogen causing meningitis.

This manuscript adds to the medical literature which defines the magnitude of pneumococcal antibiotic resistance in children, and potential mechanisms for spread.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests: 
I declare that I have no competing interests.